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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/657,457	09/08/2003	Raymond Curtis Wallace	UTL 00122	9800
7590	05/11/2006		EXAMINER	
Kyocera Wireless Corp. P. O. Box 928289 San Diego, CA 92129-8289			SEMENENKO, YURIY	
			ART UNIT	PAPER NUMBER
			2841	

DATE MAILED: 05/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.	WALLACE, RAYMOND CURTIS	
Examiner	Art Unit	
Yuriy Semenenko	2841	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1) Responsive to communication(s) filed on 15 February 2006.  
2a) This action is **FINAL**.                            2b) This action is non-final.  
3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4) Claim(s) 1-10 and 16-25 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) Claim(s) \_\_\_\_\_ is/are allowed.  
6) Claim(s) 1-10 and 16-25 is/are rejected.  
7) Claim(s) \_\_\_\_\_ is/are objected to.  
8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

9) The specification is objected to by the Examiner.  
10) The drawing(s) filed on 08 September 2003 is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) All    b) Some \* c) None of:  
1. Certified copies of the priority documents have been received.  
2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) Notice of References Cited (PTO-892)  
2) Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_

4) Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_

5) Notice of Informal Patent Application (PTO-152)  
6) Other: \_\_\_\_\_

## DETAILED ACTION

### ***Response to Amendment***

1. Amendment filed on 02/15/2006 has been entered.

In response to the Office Action dated 08/12/2005, Applicants has amended claims 1-5, 7-10.

Claims 11-15 have been cancelled. Claims 16-25 are newly added.

Claims 1-10 and 16-25 are now pending in the application.

### ***Response to Arguments***

2. Applicant's arguments are considered and acknowledged but are moot in view of the new grounds of rejection (see below).

2.1. Nevertheless, examiner notes the following. Applicant's arguments that "Specifically, the Levine reference, in for example Figure 1, discloses transmission lines (115, 120) sandwiched between a substrate 105 and a coverplate 110 attached to the substrate by adhesive. The substrate and cover plate further have integral conductive ground plates 130, 135. Thus, Levine does not disclose the claimed invention." are not found persuasive. Levine discloses (page 4, [0034]) "because the dielectric overlay 110, Fig. 1 is so thick, there is no need for a ground plan 130 atop the overlay". So coverplate 110 Levine considers as an individual dielectric component consisting of a solid dielectric material having a dielectric constant (page 4, [0035]).

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3.1. Claims 2-4 and 6-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ito (Patent # 5528207 hereinafter "Ito") in view of Levine et al. (PGPub # 2002/0175779 hereinafter "Levine").

As to claim 2: Ito discloses in Fig. 6 a circuit card assembly, comprising: a dielectric component 11 (column 2, lines 64-66); a printed circuit board (p); and an electrical component (s1) disposed on the printed circuit board and having an electrical parameter that is sensitive to the dielectric constant of the dielectric component 11, wherein the dielectric component 11 is attached to the printed circuit board (p) proximate to the electrical component to modify the electrical parameter.

except Ito doesn't explicitly teach a dielectric component consisting of the dielectric material having a dielectric constant.

Levine discloses in Fig. 1 and 4 a dielectric component 110 consisting of the dielectric material having a dielectric constant.

Therefore it would have been obvious to one of ordinary skill in the art, at time the invention was made, for Ito to include in his invention that a dielectric component consisting of the dielectric material having a dielectric constant to minimize the crosstalk as taught by Levine (page 1, [0007]).

As to claim 3: Ito discloses in Fig. 6 a circuit card assembly having all of the claimed features as discussed above with respect claim 2, wherein the dielectric component 11, Fig. 6 is in a form of a block.

As to claim 4: Ito discloses a circuit card assembly having all of the claimed features as discussed above with respect claim 2, wherein the dielectric component 11, Fig. 6 is attached to the printed circuit board (p) and is disposed on top of the electrical component (s1).

As to claim 6: Ito discloses a circuit card assembly having all of the claimed features as discussed above with respect claim 2, wherein the electrical component (s1) is a trace. (column 3, lines 29-32).

As to claims 7 and 8: Ito discloses a circuit card assembly having all of the claimed features as discussed above with respect claim 2, wherein the dielectric component 11, Fig. 6 is attached to the printed circuit board (p) utilizing pads (m1, m2),

except, Ito doesn't explicitly teach the dielectric component is attached to the printed circuit board utilizing nonconductive adhesive dots (pads) attached to the printed circuit board.

Levine discloses in Fig. 1 the dielectric material 110 is attached to the printed circuit board 105 via adhesive layer 125 attached to the printed circuit board.

Therefore it would have been obvious to one of ordinary skill in the art, at time the invention was made for Ito to include in his invention the dielectric component is attached to the printed circuit board utilizing adhesive attached to the printed circuit board.

Benefit of doing so is to provide precision position of dielectric component on the printed circuit board.

Although, Ito doesn't explicitly teach that shape of adhesive is as a dot shape of adhesive, at time the invention was made, it was old and well-known to use adhesive

dots to is attach the dielectric material to the printed circuit board. This shape is one of many known shape for adhesive layer. And further, it has been held *In re Dailey*, 357 F.2d 669, 149 USPQ 47 (CCPA 1966) that configuration of the claimed disposable plastic nursing container was a matter of choice which a person of ordinary skill in the art would have found obvious absent persuasive evidence that the particular configuration of the claimed container was significant.

Therefore it would have been obvious to one of ordinary skill in the art, at time the invention was made for Ito to include in his invention the dielectric material is attached to the printed circuit board utilizing non-conductive adhesive dots (pads) attachable from a surface of the dielectric component to the circuit card assembly.

Benefit of doing so is to easy take of dielectric material from the printed circuit board and easy to position it again.

As to claim 9: Ito, as modified, discloses a circuit card assembly having all of the claimed features as discussed above with respect claim 2, wherein the dielectric component 11, Fig. 6 is in direct contact with the electrical component (s1).

As to claim 10: Ito, as modified, discloses a circuit card assembly having all of the claimed features as discussed above with respect claim 2, wherein the electrical parameter is modified as a function of an orientation or a position of the dielectric component relative to the electrical component.

3.2. Claims 5 and 16-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ito in view of Osadchy et al. (Patent # 6621377 hereinafter "Osadchy") and in view of Levine.

As to claim16: Ito, as modified, discloses the circuit card assembly having all of the claimed features as discussed above with respect claim 2,

except, Ito doesn't teach the electrical component is a quarter-wave transformer.

Osadchy discloses in Fig. 1-3 the electrical component 32,34 is a quarter-wave transformer (column 4, lines 18-20).

Therefore it would have been obvious to one of ordinary skill in the art, at time the invention was made for Ito to include in his invention that the electrical component is a quarter-wave transformer, to provide continuously adjustable phase shifters, as taught by Osadchy (column 3, lines ).

As to claim 5: Ito, as modified, discloses the circuit card assembly having all of the claimed features as discussed above with respect claim 2,

except, Ito doesn't teach the dielectric component is attached to the printed circuit board and is disposed under the electrical component.

Osadchy discloses the dielectric component 18, Fig. 2 is attached to the printed circuit board 12 and is disposed under the electrical component 32, 34.

Therefore it would have been obvious to one of ordinary skill in the art, at time the invention was made for Ito to include in his invention that the dielectric component is attached to the printed circuit board and is disposed under the electrical component to provide continuously adjustable phase shifters, as taught by Osadchy (column 3, lines ).

As to claims 17-19: Ito, as modified, discloses the circuit card assembly having all of the claimed features as discussed above with respect claim 2, wherein the dielectric component is attached to the printed circuit board at a first orientation with respect to the electrical component for optimizing the trace for cellular band frequency communication as claimed claim 17, or wherein the dielectric component is attached to the printed circuit board at a second orientation with respect to the electrical component for optimizing the trace for personal communications services (PCS) communication, as claimed claim 18, or wherein the dielectric component is attached to the printed circuit board at a third orientation with respect to the electrical component for optimizing the trace for global positioning system (GPS) frequency communication, as claimed claim 19.

Examiner note that a claims 17-19 containing "the dielectric component is attached to the printed circuit board at a first orientation with respect to the electrical component for optimizing the trace for cellular band frequency communication". Such claims containing a "recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus " if the prior art apparatus teaches all the structural limitations of the claim. Ex parte Masham, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987). In the instant case Ito, as modified, shows all of the structural limitations of the claim 2.

3.3. Claims 1 and 20-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Osadchy et al. in view of Levine.

As to claims 1: Osadchy discloses in Fig. 1-3 a quarter-wave transformer (column 4, lines 18-22) in a handheld wireless communications device (column 1, lines 20-31), comprising: a conductive trace 32, 34 positioned on a substrate 12, and a dielectric block 14, the dielectric block mounted on the substrate and disposed in proximity to the conductive trace. Osadchy discloses for a voltage tunable dielectric material 14 (column 4, lines 1-3) to affect the electrical properties of the conductive trace 32, 34. Although, Osadchy does not teach variation of an orientation of the dielectric block with respect to the conductive trace affects the electrical properties of the conductive trace, at time the invention was made, it was old and well known an established scientific principle that dielectric properties of dielectric materials depend on an orientation of the dielectric materials (C. Kittel, Introduction to solid State Physics, Sixth edition ).

Therefore it would have been obvious to one of ordinary skill in the art, at time the invention was made for Osadchy to include in his invention wherein an orientation of the dielectric block with respect to the conductive trace affects the electrical properties of the conductive trace.

Benefit of doing so is to simplify tuning of the electrical parameters of the system.

Osadchy fail also to teach a dielectric block consisting of solid dielectric material.

Levine discloses in Fig. 1 and 4 a dielectric component 110 consisting of the

dielectric material having a dielectric constant.

Therefore it would have been obvious to one of ordinary skill in the art, at time the invention was made, for Osadchy to include in his invention that a dielectric block consisting of solid dielectric material to minimize the crosstalk as taught by Levine (page 1, [0007]).

As to claim 20: Osadchy, as modified, discloses the quarter-wave transformer, having all of the claimed features as discussed above with respect claim 1, wherein the dielectric block 14, Fig.1 is in direct contact with the conductive trace 32, 34.

As to claim 21: Osadchy, as modified, discloses the quarter-wave transformer, having all of the claimed features as discussed above with respect claim 1, wherein the dielectric block 14, Fig. 1 is disposed above the conductive trace 32, 34.

As to claim 22: Osadchy, as modified, discloses the quarter-wave transformer, having all of the claimed features as discussed above with respect claim 1, wherein the dielectric block 18, Fig. 1 is disposed below the conductive trace 32, 34.

As to claims 23-25: Osadchy, as modified, discloses the quarter-wave transformer having all of the claimed features as discussed above with respect claim 1, wherein the orientation is a first orientation for optimizing the trace for cellular band frequency communication, as claimed in claim 23, or wherein the orientation is a second orientation for optimizing the trace for personal communications services (PCS) communication, as claimed in claim 24, or wherein the orientation is a third orientation for optimizing the trace for global positioning system (GPS) frequency communication as claimed in claim 25.

Examiner note that a claims 23-25 containing "orientation for optimizing the trace for cellular band frequency communication, or for optimizing the trace for personal communications services (PCS) communication, or orientation for optimizing the trace for global positioning system (GPS) frequency communication". Such claims

containing a "recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus " if the prior art apparatus teaches all the structural limitations of the claim. *Ex parte Masham*, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987). In the instant case Ito, as modified, shows all of the structural limitations of the claim 1.

3.4. Claims 2, 5 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brown et al. (PGPub # 2004/0095202 hereinafter "Brown") in view of Ito and in view of Levine.

As to claim 2: Brown discloses in Fig. 1 a circuit card assembly 100, comprising: a dielectric component [consisting of solid dielectric material having a dielectric constant 108]; a printed circuit board (102); and an electrical component (110) disposed on the printed circuit board and having an electrical parameter that is sensitive to the dielectric constant of the dielectric component 108, wherein the dielectric component 108 is attached to the printed circuit board (102) proximate to the electrical component to modify the electrical parameter.

Brown does not explicitly teach a dielectric component consisting of solid dielectric material.

Levine discloses in Fig. 1 and 4 a dielectric component 110 consisting of the dielectric material having a dielectric constant.

Therefore it would have been obvious to one of ordinary skill in the art, at time the invention was made, for Brown to include in his invention that a dielectric block consisting of solid dielectric material to minimize the crosstalk as taught by Levine (page 1, [0007]).

As to claim 5: Brown as modified, discloses the circuit card assembly, according to claim 2, wherein the dielectric component 108, Fig. 1 is attached to the printed circuit board and is disposed under the electrical component, (see Fig.1).

As to claim 10: Brown as modified, discloses the circuit card assembly, according to claim 2, wherein the electrical parameter is modified as a function of an orientation of the dielectric component relative to the electrical component (page 2, [0018]).

***Conclusion***

4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

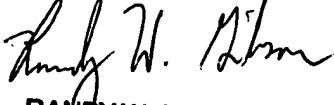
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

5.1. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yuriy Semenenko whose telephone number is (571) 272-6106. The examiner can normally be reached on 8:30am - 5:00pm.

5.2. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kamand Cuneo can be reached on (571)- 272-1957. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

5.3. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

YS



RANDY W. GIBSON  
PRIMARY EXAMINER